



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of B. McArthur et al.)

Application No.: 10/039,426)

Filed: January 4, 2002)

Conf. No.: 8965)

For: METHOD AND APPARATUS FOR)
PROPER ORDERING OF)
REGISTRATION DATA)

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Mickelle Melendez

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Sir:

In response to the Notice to File Missing Parts of Application mailed February 7, 2001, the following documents are submitted with this Response:

- 1) A copy of the Notice to File Missing Parts;
- 2) A check in the amount of \$65.00 to cover the surcharge;
- 3) Declaration for Patent Application;
- 4) Substitute Drawings (16 sheets); and
- 5) Return Postcard for this transmittal.

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Respectfully submitted,

David A. Hall

David A. Hall
Reg. No. 32,233

Heller Ehrman White & McAuliffe LLP
4350 La Jolla Village Drive, 6th Floor
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Telephone: (858) 450-8400



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10039426 040802



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APPLICATION NUMBER	FILING/RECEIPT DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NUMBER
10/039,426	01/04/2002	B. McArthur	38203-6079

David A. Hall
Heller Ehrman White & McAuliffe LLP
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4350 La Jolla Village Drive
San Diego, CA 92122-1246



CONFIRMATION NO. 8965

FORMALITIES LETTER



OC000000007455122

Date Mailed: 02/11/2002

NOTICE TO FILE MISSING PARTS OF NONPROVISIONAL APPLICATION

FILED UNDER 37 CFR 1.53(b)

Filing Date Granted

An application number and filing date have been accorded to this application. The item(s) indicated below, however, are missing. Applicant is given **TWO MONTHS** from the date of this Notice within which to file all required items and pay any fees required below to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

- The oath or declaration is missing.
A properly signed oath or declaration in compliance with 37 CFR 1.63, identifying the application by the above Application Number and Filing Date, is required.
- To avoid abandonment, a late filing fee or oath or declaration surcharge as set forth in 37 CFR 1.16(l) of \$65 for a small entity in compliance with 37 CFR 1.27, must be submitted with the missing items identified in this letter.
- The balance due by applicant is \$ 65.

The application is informal since it does not comply with the regulations for the reason(s) indicated below.

The required item(s) identified below must be timely submitted to avoid abandonment:

- Substitute drawings in compliance with 37 CFR 1.84 because:
 - drawing sheets do not have the appropriate margin(s) (see 37 CFR 1.84(g)). Each sheet must include a top margin of at least 2.5 cm. (1 inch), a left side margin of at least 2.5 cm. (1 inch), a right side margin of at least 1.5 cm. (5/8 inch), and a bottom margin of at least 1.0 cm. (3/8 inch);

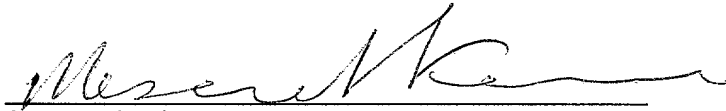
04/09/2002 YPOLITE1 00000004 10039426

01 FC:205

65.00 OP

*A copy of this notice **MUST** be returned with the reply.*

20030409 9246001

A handwritten signature in black ink, appearing to read "M. S. K.", is written over a horizontal line.

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PART 2 - COPY TO BE RETURNED WITH RESPONSE

20090709 09:24:50

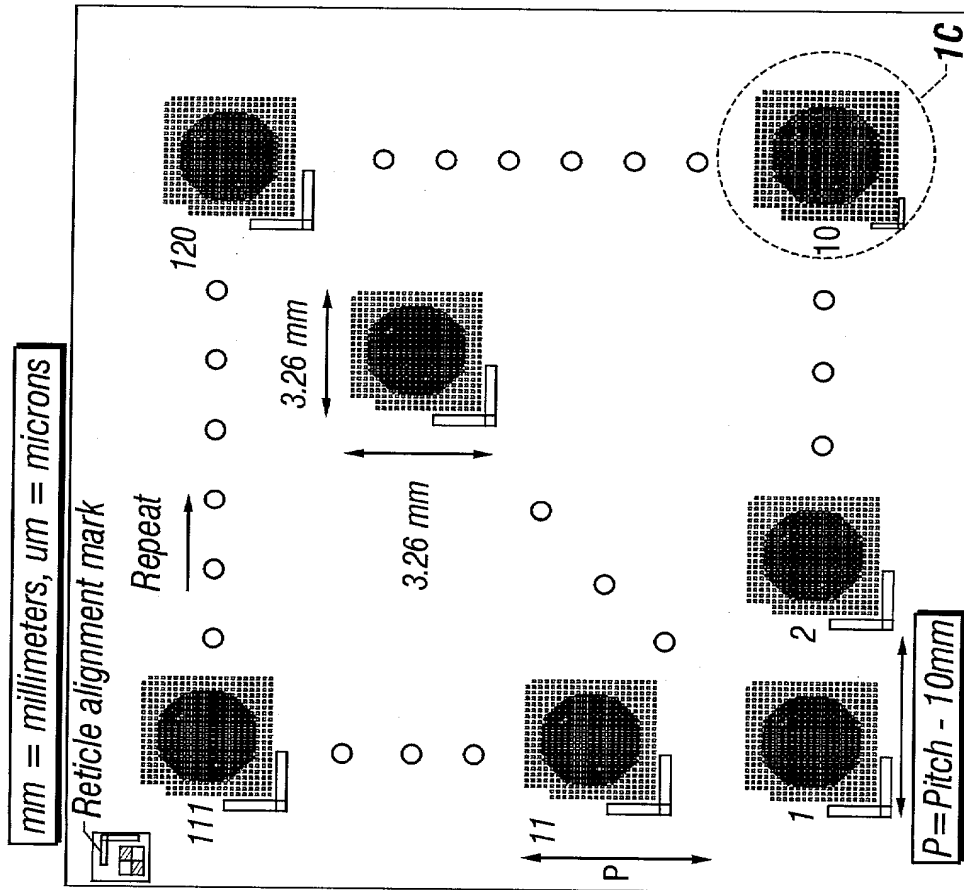


FIG. 1A

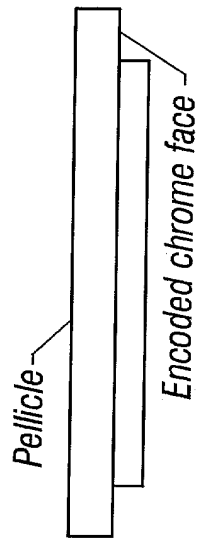


FIG. 1B

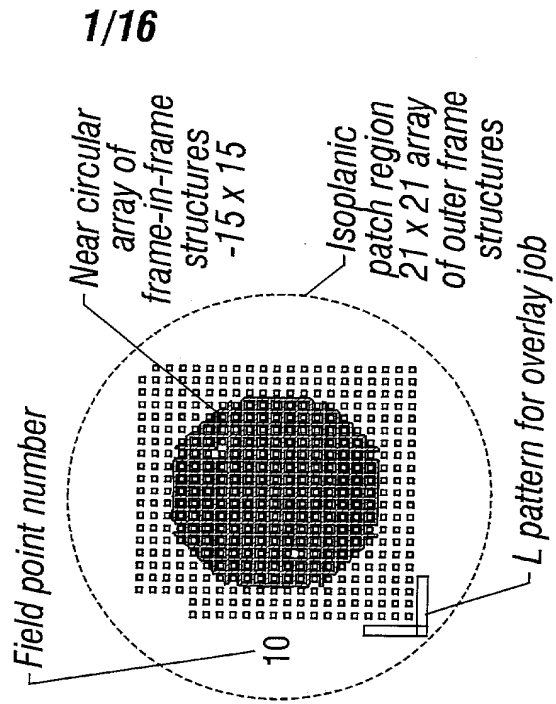
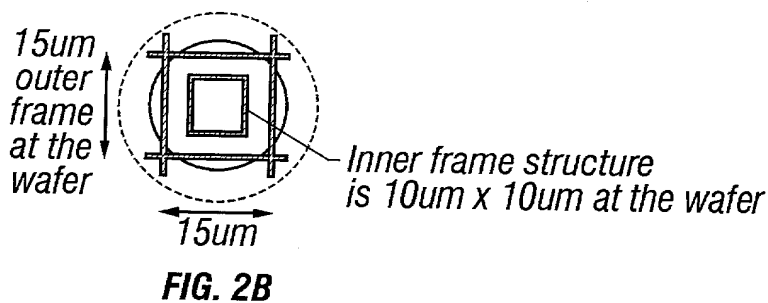
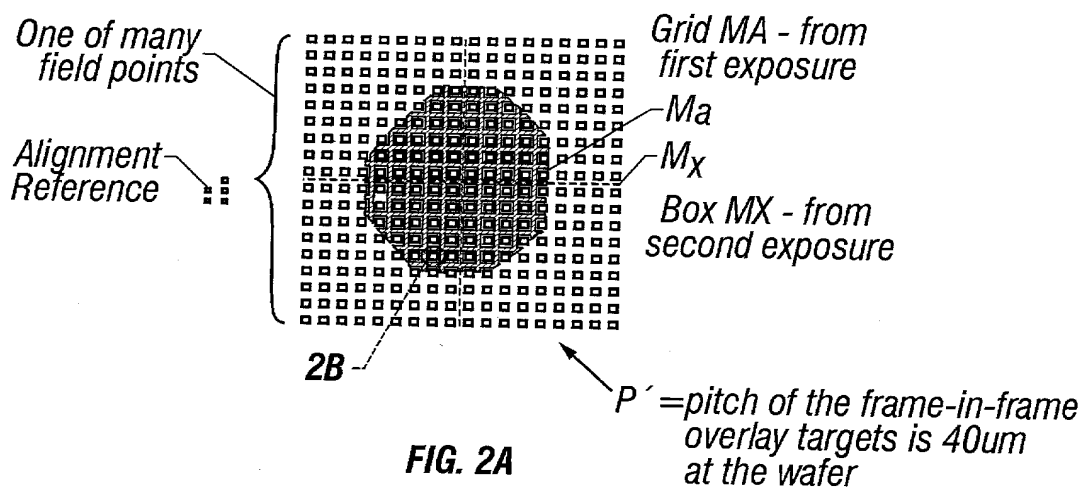
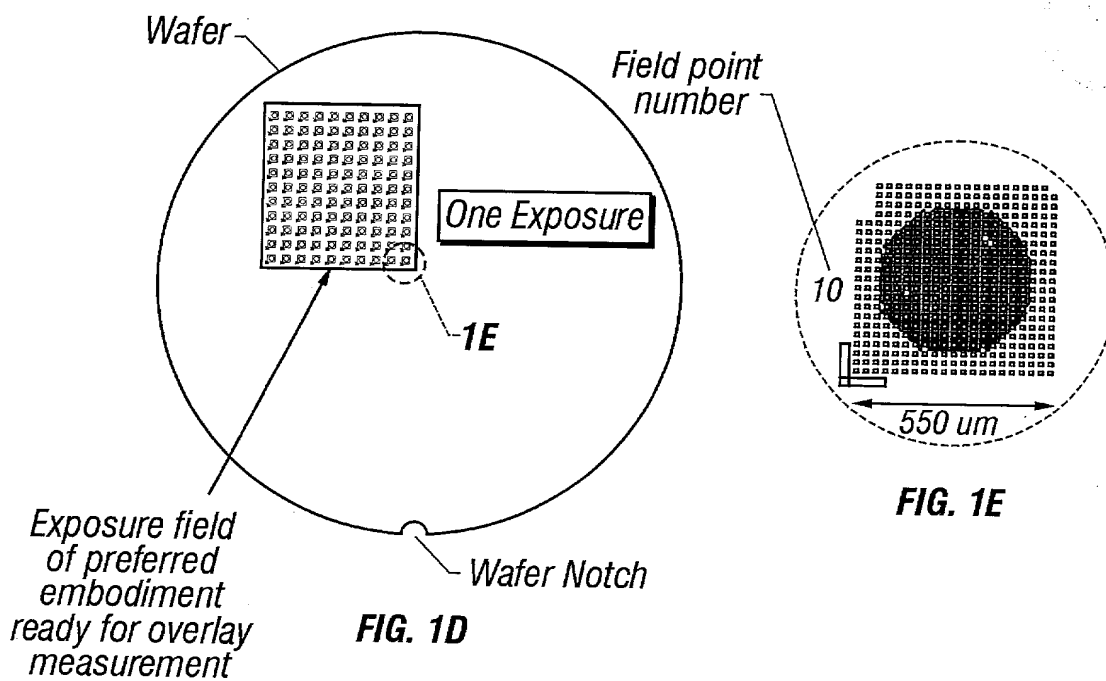


FIG. 1C



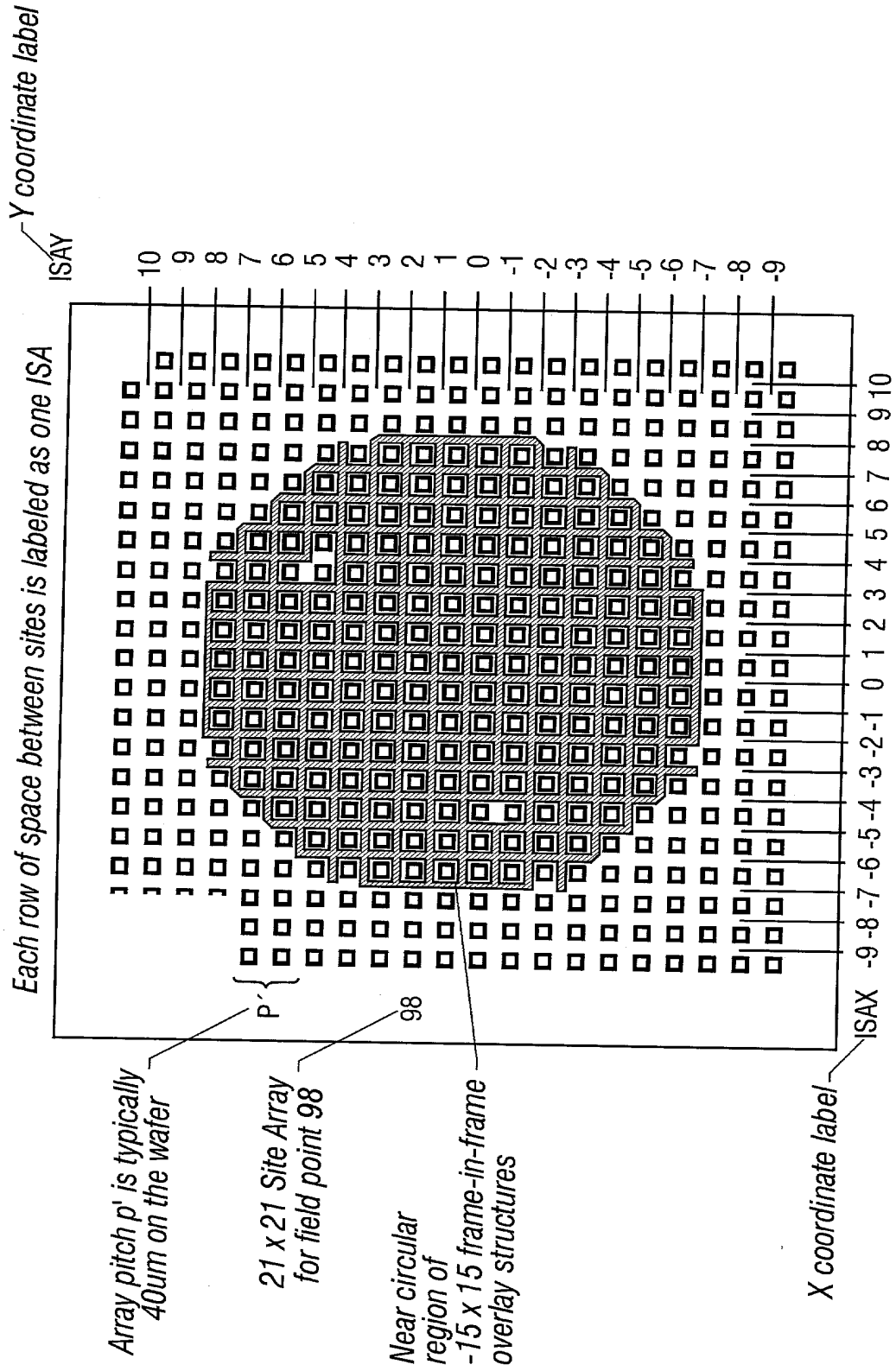


FIG. 3

208040" 921600T

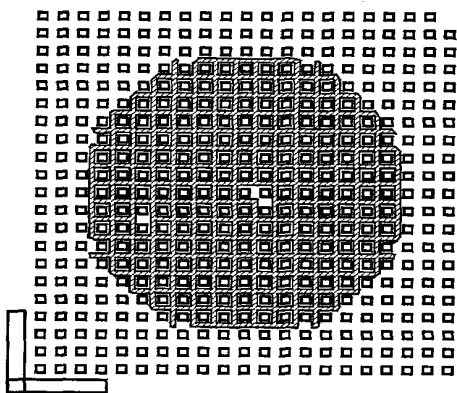
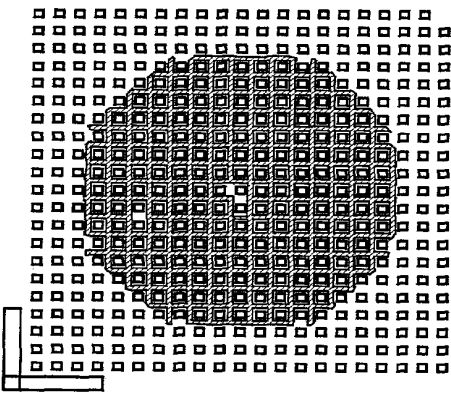
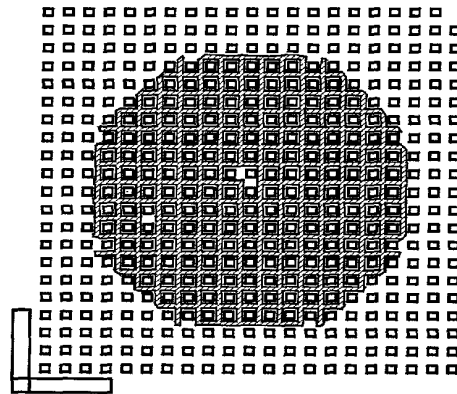
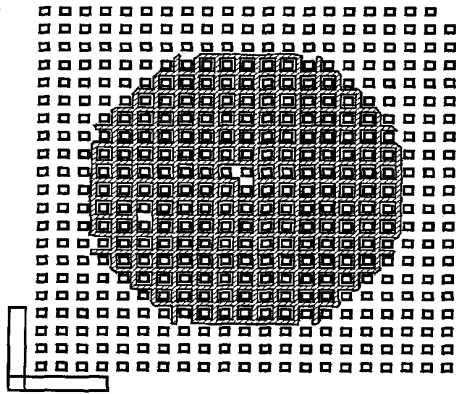


FIG. 4A

208040" 9246E00T
10039426 .040802

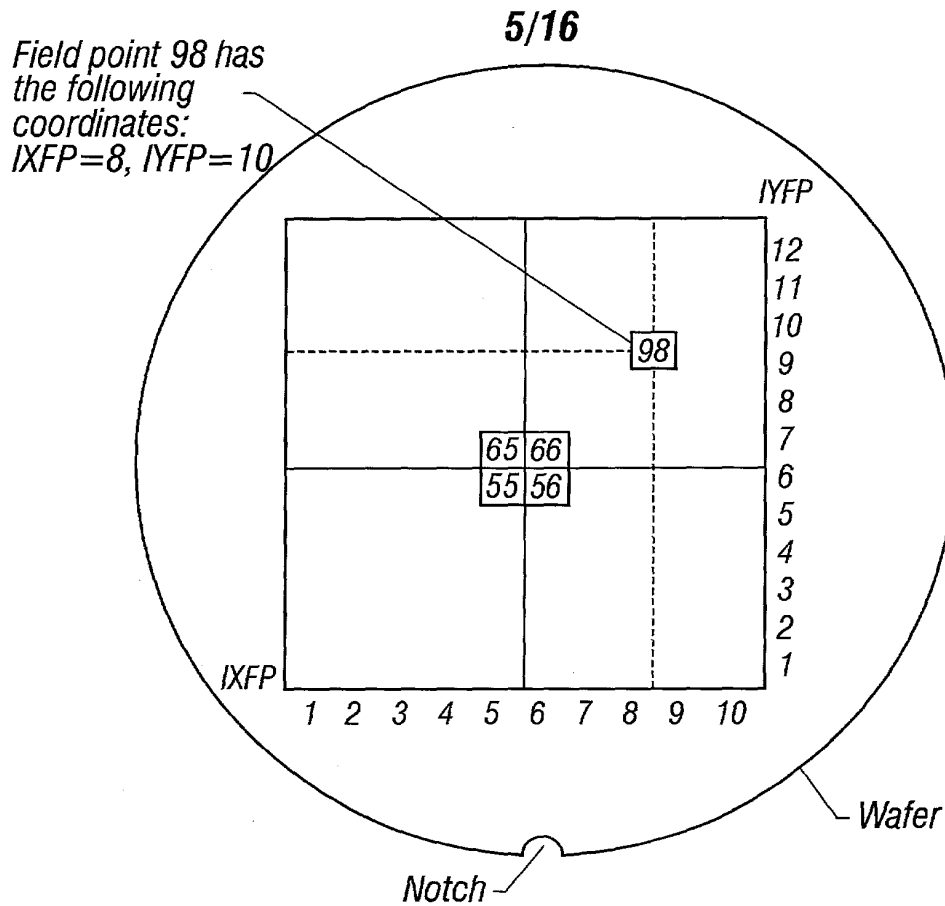


FIG. 4B

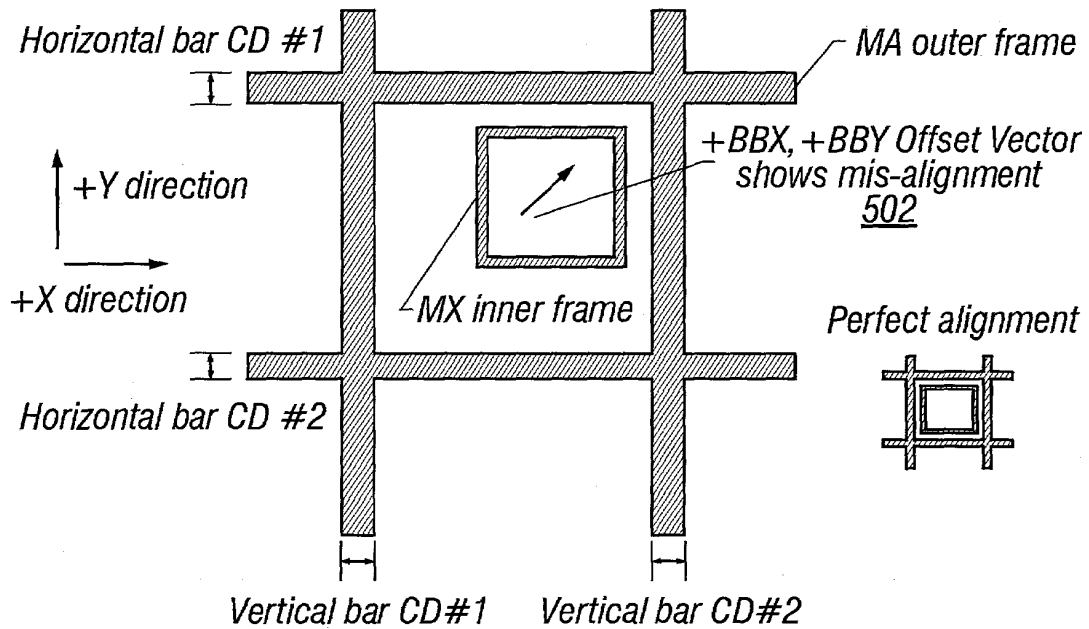


FIG. 5A

$CD(\text{near edge}) < CD(\text{near center})$
 Frame on edge is thinner than center

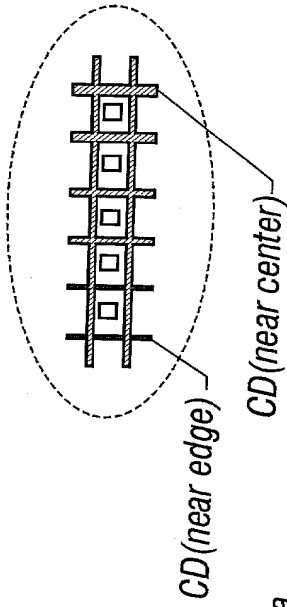


FIG. 5B-2

Typical field point array
 for the "ISI" reticle
 as printed on a wafer

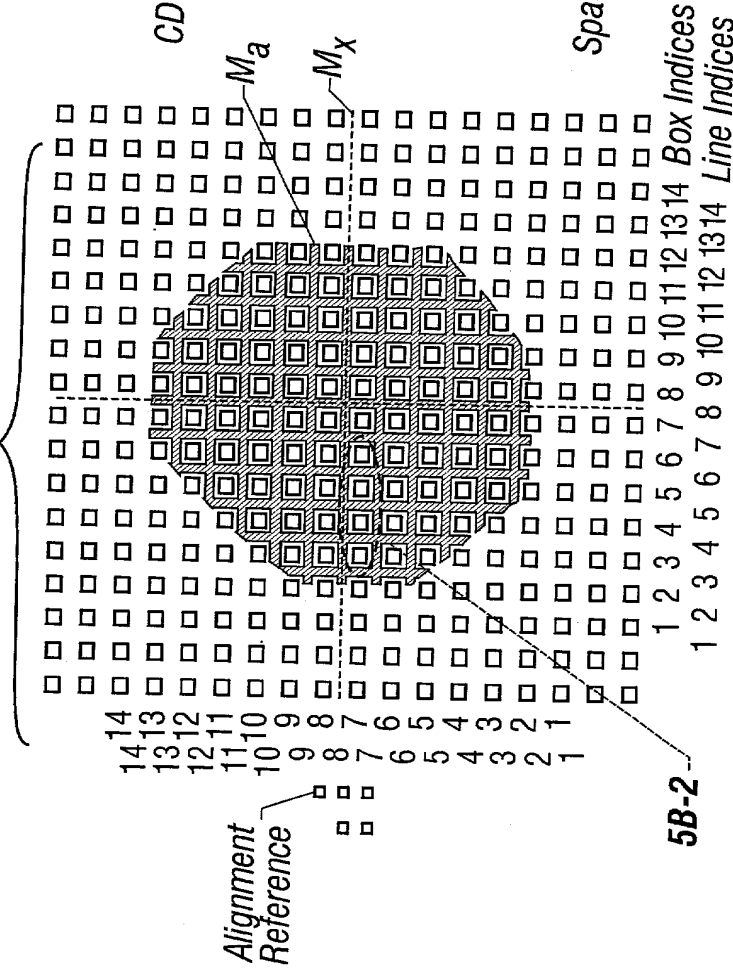


FIG. 5B-1

Space → Overlay measurements using space techniques → CD

→ Overlay measurements using CD or edge techniques → CD

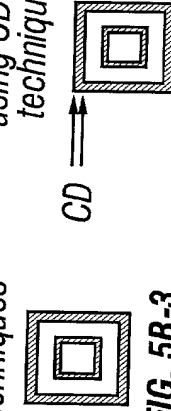


FIG. 5B-3

FIG. 5B-4

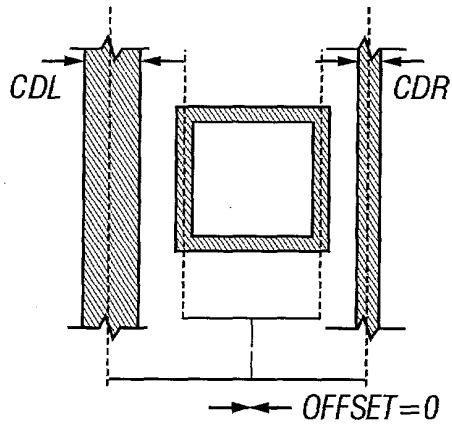


FIG. 5C

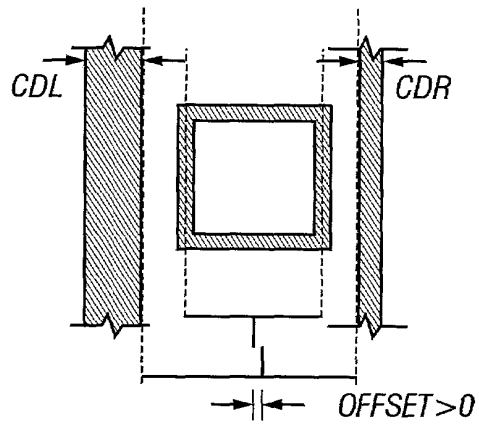


FIG. 5D

21 x 21 array of outer
frame structures for
this site array

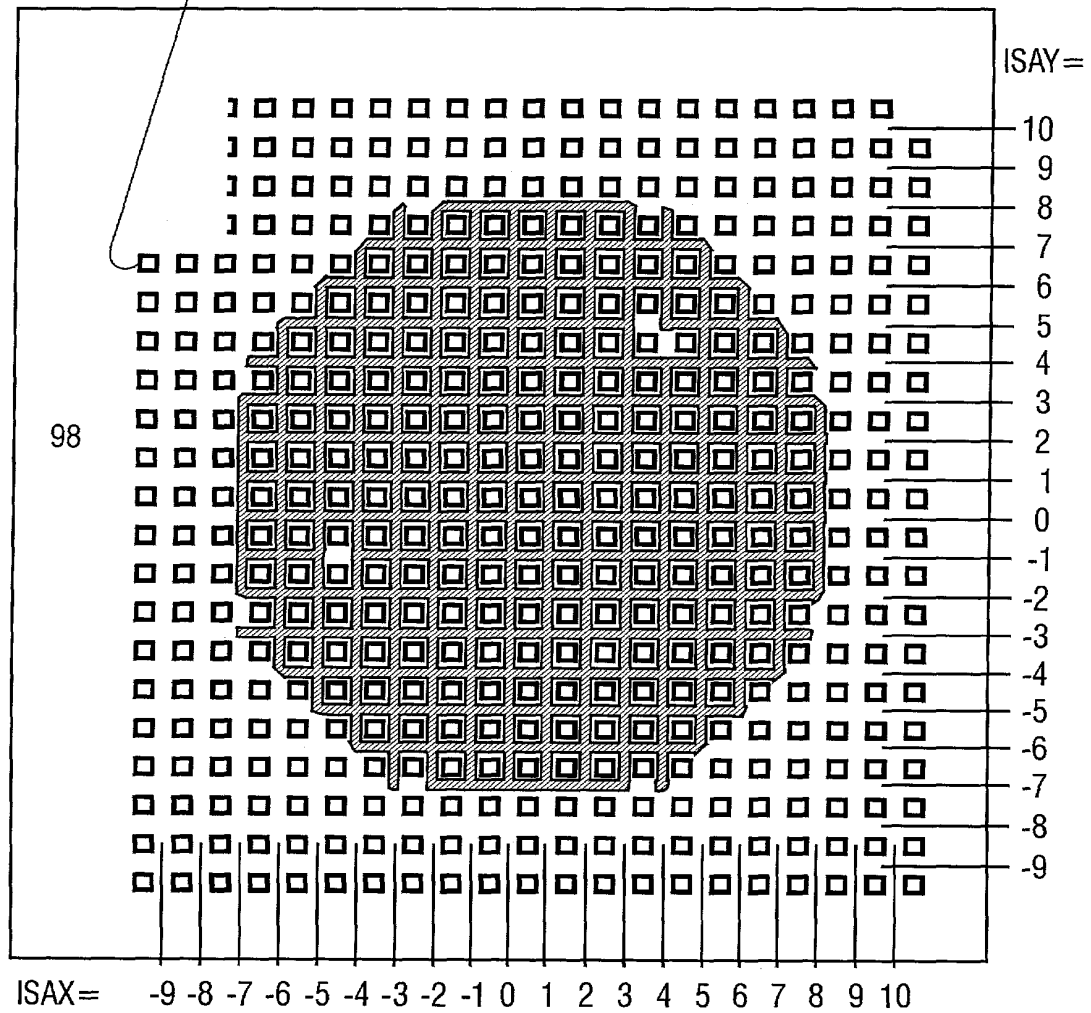
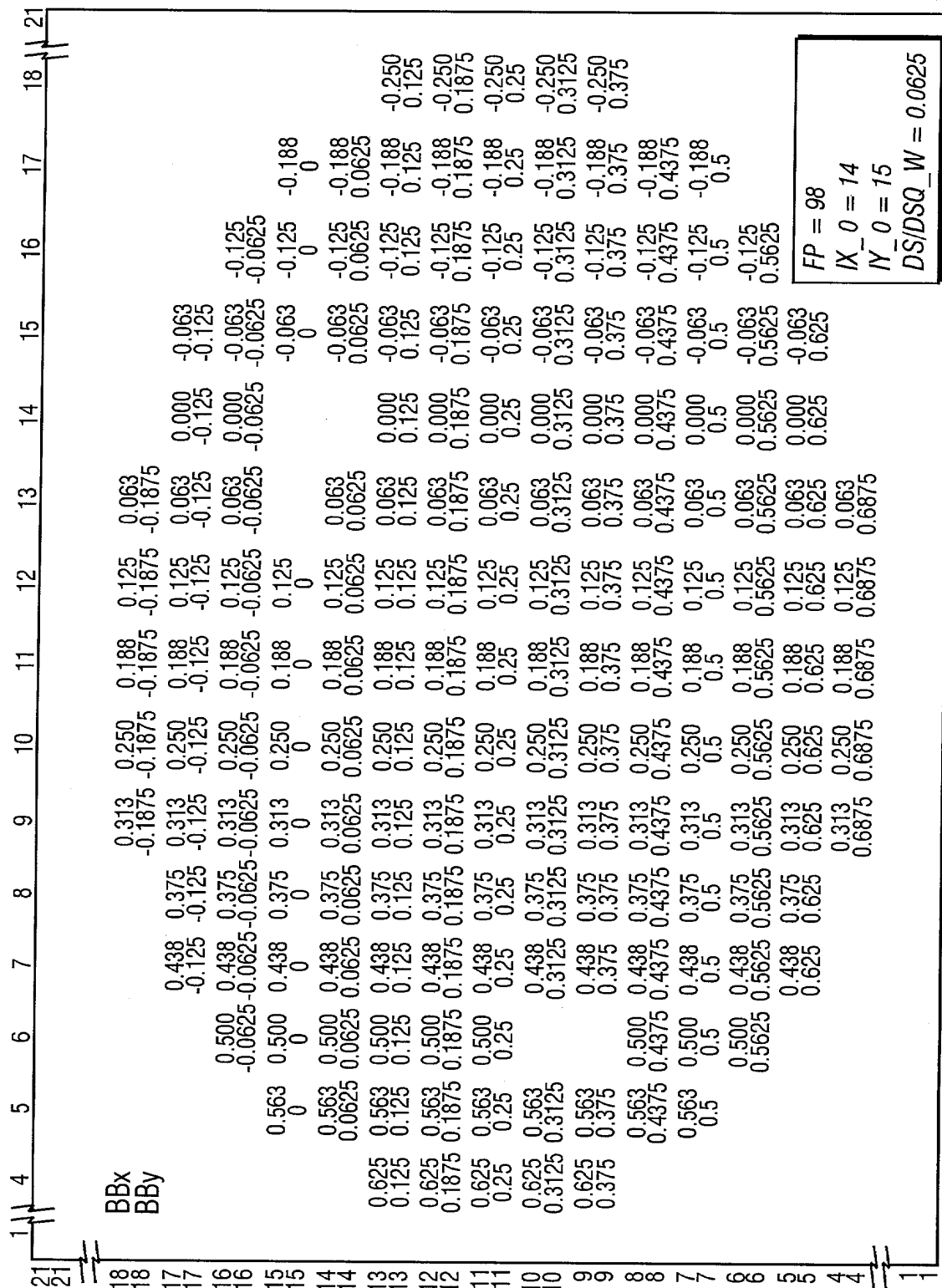


FIG. 6

FIG. 7



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$IX0$ =position within 21 x 21 array where $(BBx, BBy) = (0,0)$ occurs
 $IY0$
 FP =field point number

IY =Row

12	7 17 111	8 17 112	9 17 113	10 17 114	11 17 115	12 17 116	13 17 117	14 17 118	15 17 119	16 17 120
11	7 16 101	8 16 102	9 16 103	10 16 104	11 16 105	12 16 106	13 16 107	14 16 108	15 16 109	16 16 110
10	7 15 91	8 15 92	9 15 93	10 15 94	11 15 95	12 15 96	13 15 97	14 15 98	15 15 99	16 15 100
9	7 14 81	8 14 82	9 14 83	10 14 84	11 14 85	12 14 86	13 14 87	14 14 88	15 14 89	16 14 90
8	7 13 71	8 13 72	9 13 73	10 13 74	11 13 75	12 13 76	13 13 77	14 13 78	15 13 79	16 13 80
7	7 12 61	8 12 62	9 12 63	10 12 64	11 12 65	12 12 66	13 12 67	14 12 68	15 12 69	16 12 70
6	7 11 51	8 11 52	9 11 53	10 11 54	11 11 55	12 11 56	13 11 57	14 11 58	15 11 59	16 11 60
5	7 10 41	8 10 42	9 10 43	10 10 44	11 10 45	12 10 46	13 10 47	14 10 48	15 10 49	16 10 50
4	7 9 31	8 9 32	9 9 33	10 9 34	11 9 35	12 9 36	13 9 37	14 9 38	15 9 39	16 9 40
3	7 8 21	8 8 22	9 8 23	10 8 24	11 8 25	12 8 26	13 8 27	14 8 28	15 8 29	16 8 30
2	7 7 11	8 7 12	9 7 13	10 7 14	11 7 15	12 7 16	13 7 17	14 7 18	15 7 19	16 7 20
1	7 6 1	8 6 2	9 6 3	10 6 4	11 6 5	12 6 6	13 6 7	14 6 8	15 6 9	16 6 10
	1	2	3	4	5	6	7	8	9	10

$IX=Col$

FIG. 8

209040" 9246E001

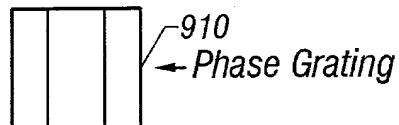
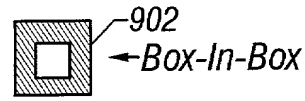


FIG. 9

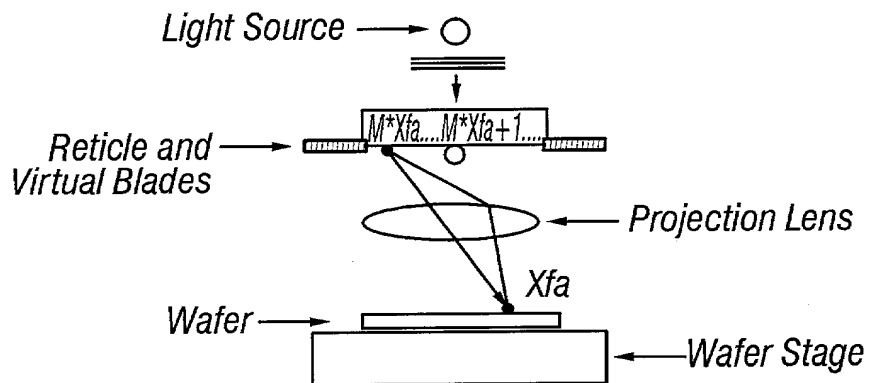


FIG. 10

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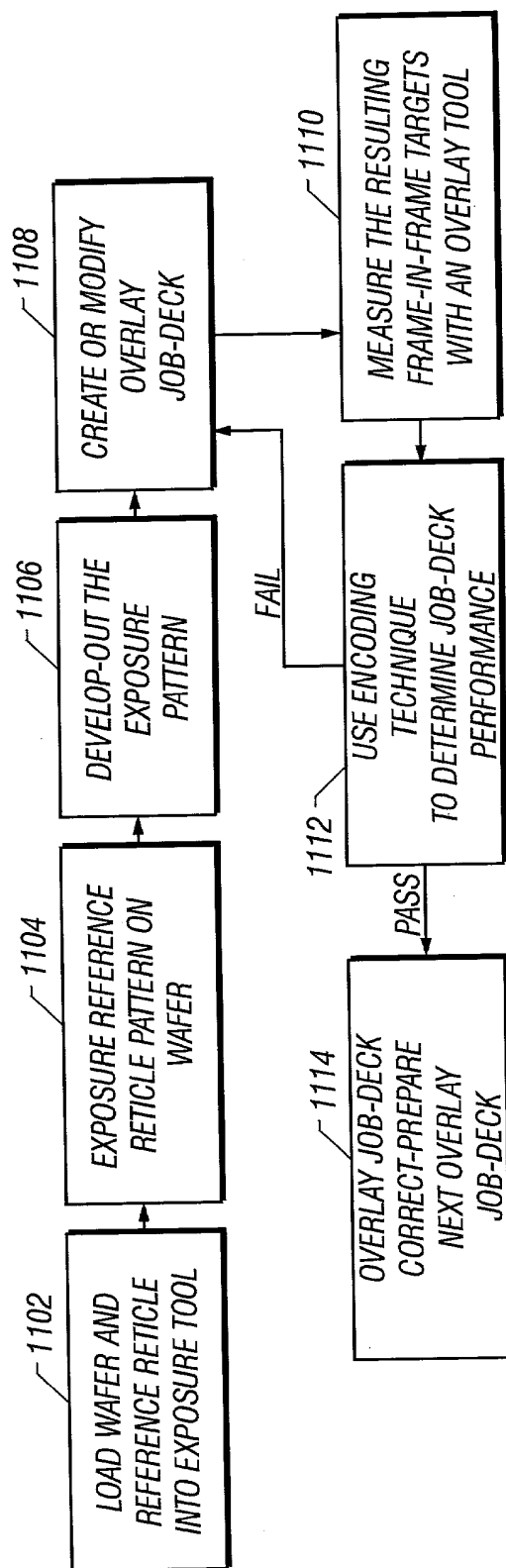


FIG. 11

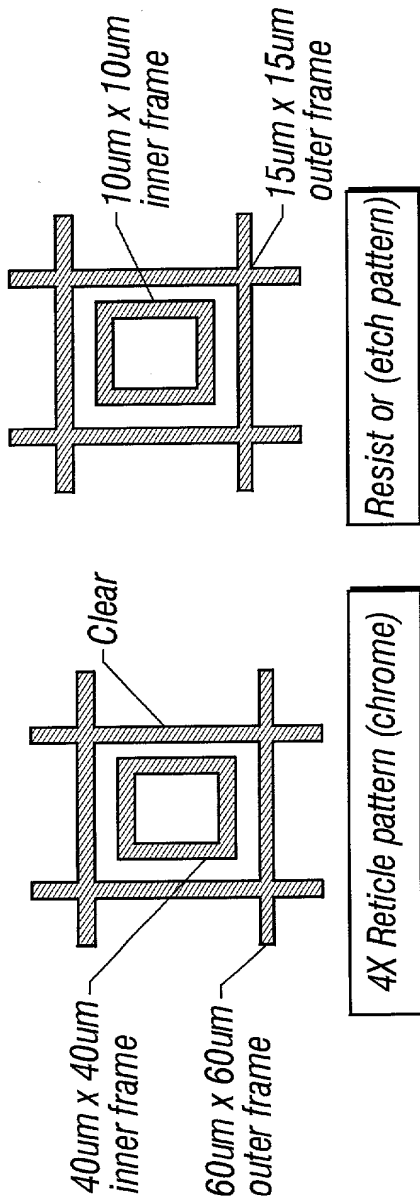
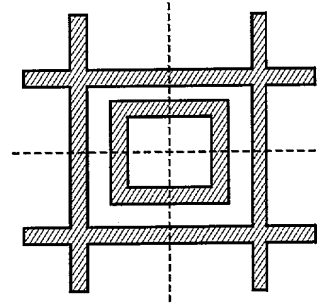


FIG. 12



Centered Frame-in-Frame structure
No shift: ISAX=0, ISAY=0

FIG. 13

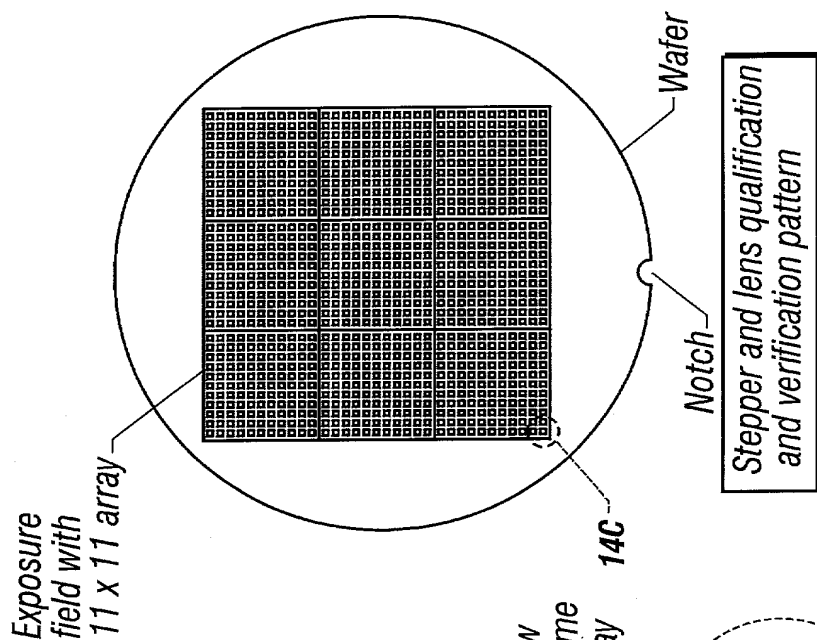


FIG. 14B

Close up view of frame-in-frame pattern-overlay target

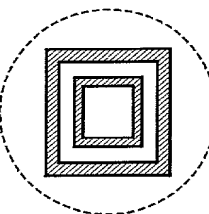


FIG. 14C

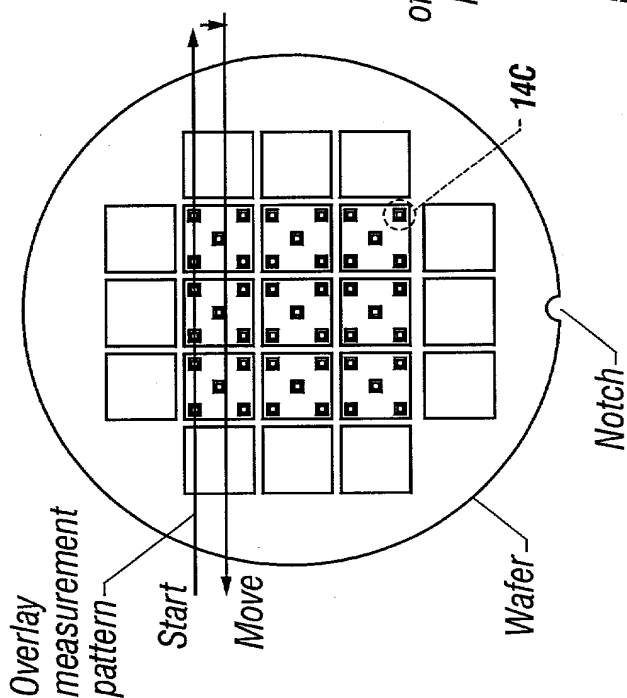
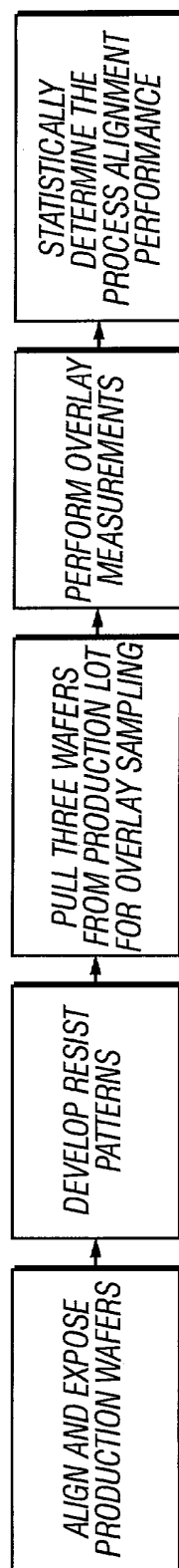
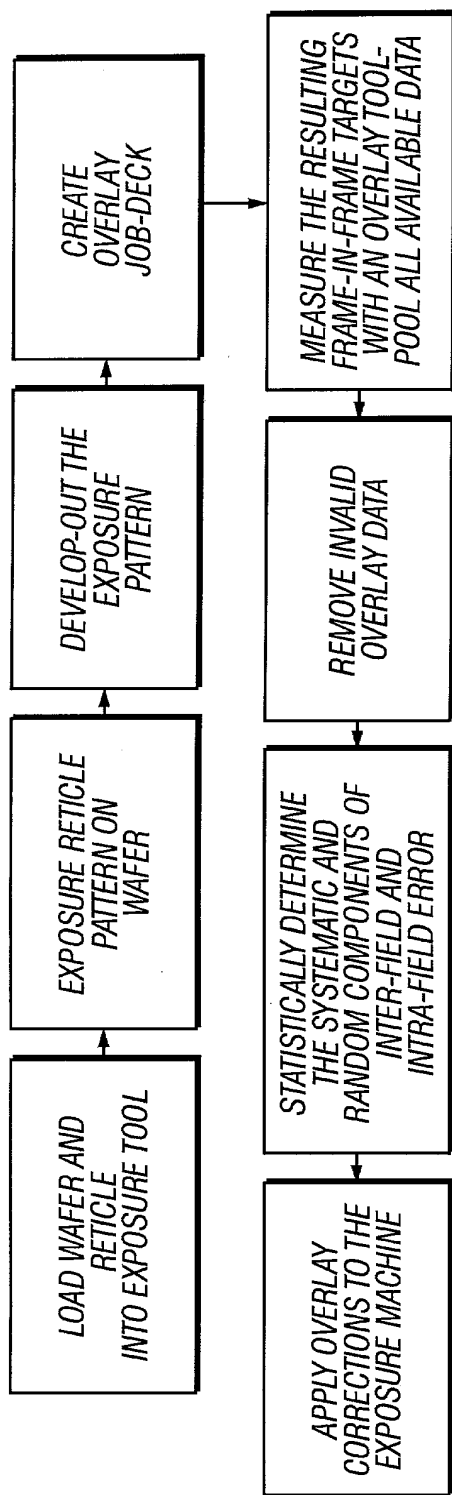


FIG. 14A



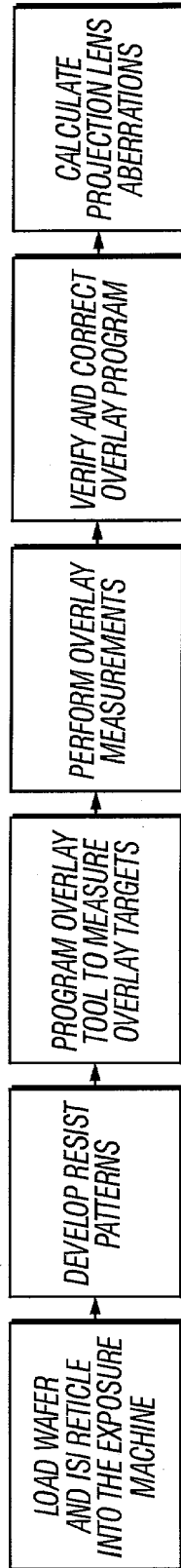


FIG. 15C